

III. Remarks

A. Status of the Application

Claims 24-46 are currently pending. No claims are added, canceled, or amended by the present paper. Reconsideration of this application in light of the following remarks is respectfully requested.

B. Allowable Subject Matter

Applicants appreciate the Examiner's indication that claims 45 and 46 are allowed.

C. Claim Rejections Under 35 U.S.C. §103

Claims 24-44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,062,575 to Mickel et al. ("Mickel") in view of U.S. Patent No. 4,060,219 to Crawford ("Crawford"). Applicants traverse the rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness.

In *KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007), the Court stated that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *Id.* at 1741 (emphasis added).

As the PTO recognizes in MPEP § 2142:

... The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness...

In the present application, a *prima facie* case of obviousness has not been factually supported for at least the reasons set forth below.

1. The Examiner has not shown that all elements in the claim have been considered

Even when combined, Mickel and Crawford cannot be applied to reject the pending claims under 35 U.S.C. § 103(a) which provides that:

A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ... (Emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be considered. However, even when combined Mickel and Crawford do not disclose or suggest, all the claim limitations of the pending claims.

Independent Claims 24 and 32

With respect to independent claim 32, even when combined, Mickel and Crawford do not disclose or suggest “a first aperture extending from the external surface to the internal surface along a first axis substantially perpendicular to the longitudinal axis, the first aperture having a first length extending substantially along the longitudinal axis between a proximal wall and a distal wall, the first aperture having a first width extending substantially transverse to both the longitudinal axis and the first axis between a pair of sidewalls, wherein the first length is greater than the first width such that the first aperture is elongated along the longitudinal axis and wherein the proximal wall, distal wall, and pair of sidewalls extend in a direction substantially parallel to the first axis.” In that regard, the Office Action notes that Mickel fails to disclose a first aperture as recited and proposes to combine passageway 146 of Crawford with the device of Mickel. Office Action, p.4. However, claim 32 requires the first aperture to extend from the external surface to the internal surface along the first axis substantially perpendicular to the longitudinal axis. Furthermore, claim 32 requires the first aperture’s proximal wall, distal wall, and pair of sidewalls extend in a direction substantially parallel to the first axis, that is, substantially perpendicular to the longitudinal axis. In contrast, as shown below in FIG. 1,

Crawford teaches that passageway 146 "is drilled at a 37° angle with respect to the cylindrical axis of main body 120." Crawford, col.4 ll.32-33.

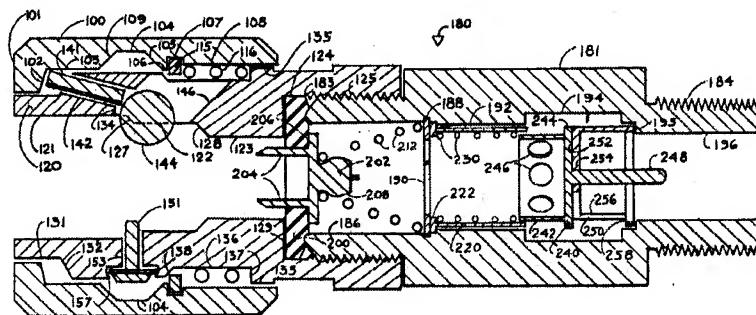


FIG. I

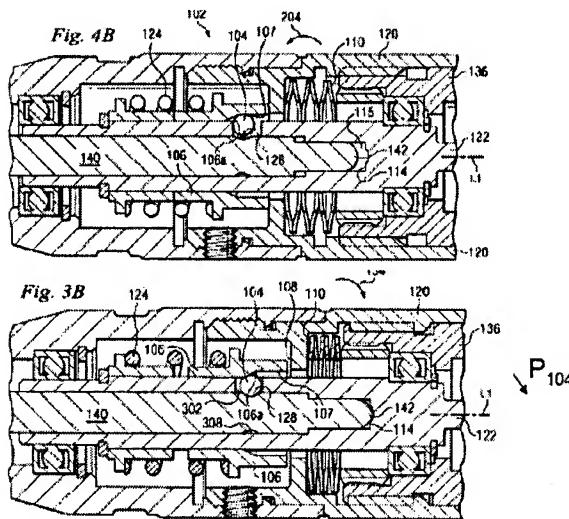
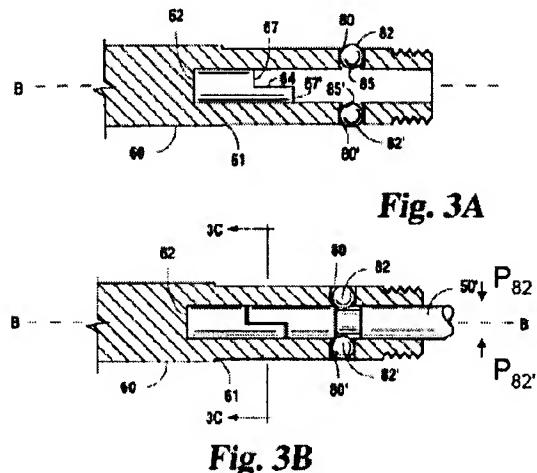
Passageway 146 and its corresponding walls extending at a 37° angle with respect to the cylindrical axis of main body 120 cannot be considered “a first aperture extending from the external surface to the internal surface along a first axis substantially perpendicular to the longitudinal axis” and “wherein the [first aperture’s] proximal wall, distal wall, and pair of sidewalls extend in a direction substantially parallel to the first axis,” as recited by claim 32.

The Office Action alleges “[t]he hole of Crawford can be considered to be substantially perpendicular. Substantially is a broad term.” Office Action, p.5. While the term “substantially perpendicular” encompasses more than exactly a 90° angle, one skilled in the art clearly would not consider the 37° angle taught by Crawford to be substantially perpendicular. In that regard, the MPEP clearly notes in §2111.01 that “during examination the USPTO must give claims their broadest reasonable interpretation” and that the “‘plain meaning’ refers to the ordinary and customary meaning given to the term by those of ordinary skill in the art.” Simply put, one skilled in the art would not consider the 37° angle taught by Crawford to be “substantially perpendicular” as recited. Furthermore, one skilled in the art would recognize that a “ 37° angle”, as taught by Crawford, is closer to teaching a parallel (*i.e.*, a 0° angle) with respect to the cylindrical axis of main body 120 than an angle that is substantially perpendicular to the cylindrical axis of main body 120. Accordingly, interpreting the “ 37° angle” taught by Crawford to be substantially perpendicular is not a reasonable interpretation and can not be considered the ordinary and customary meaning of the term as understood by those of ordinary skill in the art.

With further respect to claim 32, even when combined, Mickel and Crawford do not teach or suggest “a first locking member positioned at least partially within the first aperture and translatable along the longitudinal axis with respect to the coupling shaft from an unlocked position to a locked position to secure the medical dissection tool within the internal passage.” The Office Action identified ball 82 as corresponding to the claimed first locking member. However, it is clear from the explicit disclosure of the Mickel patent that the balls 82 and 82' are not “translatable along the longitudinal axis with respect to the coupling shaft from an unlocked position to a locked position.”

As described in the Mickel patent at Col. 6, line 36 through Col. 7, line 5, the balls 82 and 82' cannot translate with respect to the driving shaft 60 along axis BB. Instead, the balls 82 and 82' are “free to move radially within substantially cylindrical walls 80, 80' respectively.” Mickel, col.6 ll.36-38. The cylindrical openings defined by walls 80 and 80' simply do not permit translation of the balls 82 and 82' with respect to the driving shaft 60 along axis BB. As shown in Figures 3A and 3B of Mickel, the openings defined by walls 80 and 80' have substantially the same width as balls 82 and 82'. Therefore, with respect to driving shaft 60 the balls 82 and 82' are limited to radial movement, *i.e.*, movement substantially transverse to axis BB.

Further, the rotation—if any—of the balls 82 and 82' within the cylindrical walls 80, 80' clearly cannot be considered translation along the longitudinal axis. In that regard, the paths of the balls 82 and 82' with respect to the driving shaft 60 (as noted by P₈₂ and P_{82'}) cannot be considered translation along the axis BB because the paths P₈₂ and P_{82'} are in a direction substantially transverse to the axis BB. In contrast, as shown in applicants' Figs. 3b and 4b, the retention member 104 (as noted by P₁₀₄) translates through the elongated opening 302 along the longitudinal axis L1 with respect to the coupling shaft as required by claim 32.



Accordingly for at least the reasons stated above, even when combined, Mickel and Crawford fail to teach or suggest all of the limitations recited in claim 32. Therefore, Applicants respectfully request the Examiner withdraw the §103 rejection of claim 32 over Mickel and Crawford. Therefore, for this reason the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the §103 rejection of claim 32 over Mickel and Crawford should be withdrawn.

Independent claim 24 recites at least some features similar to those discussed above with respect to claim 32. For example, independent claim 24 recites “a first aperture extending from the external surface to the internal surface in a direction substantially perpendicular to the longitudinal axis, the first aperture having a first length extending substantially along the longitudinal axis and a first width extending substantially transverse to the longitudinal axis, the first length being greater than the first width such that the first aperture is elongated along the longitudinal axis,” and “a first locking member positioned at least partially within the first aperture and movable along the longitudinal axis with respect to the coupling shaft from an unlocked position to a locked position to secure the medical dissection tool within the internal passage.” For at least the same reasons discussed above, a *prima facie* case of obviousness cannot be established with respect to claim 24 based on the combination of Mickel and Crawford. Therefore, for this reason the Examiner’s burden of factually supporting a *prima facie*

case of obviousness has clearly not been met, and the §103 rejection of claim 24 over Mickel and Crawford should be withdrawn.

Dependent Claims

Claims 25-31 and 33-44 depend from independent claims 24 and 32, respectively. These claims are distinct from the cited references, for at least the same reasons discussed above with respect to their respective independent claims. Therefore, for this reason the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the § 103 rejection of claims 25-31 and 33-44 over Mickel and Crawford should be withdrawn.

Furthermore, dependent claims 25-31 and 33-44 recite additional features that the Mickel and Crawford references, alone or in combination, do not disclose or suggest. As discussed above, Crawford discloses that passageway 146 and the corresponding walls defining passageway 146 extend at a 37° angle with respect to the cylindrical axis of main body 120. *See* Crawford, col.4 ll.32-33. One skilled in the art would not consider a 37° angle, as disclosed by Crawford, to be "substantially perpendicular" to the cylindrical axis of main body 120. Accordingly, because Crawford does not disclose or suggest that passageway 146 is "substantially perpendicular," Crawford cannot be considered to disclose or suggest:

- "wherein the first aperture defines a proximal wall portion extending substantially perpendicular to the longitudinal axis and a distal wall portion extending substantially perpendicular to the longitudinal axis, the proximal and distal wall portions separated by substantially the length of the aperture along the longitudinal axis, the first locking member being spaced from the proximal wall portion in the unlocked position and spaced from the distal wall portion in the locked position," as recited by claim 25;
- "a second aperture extending from the external surface to the internal surface in a direction substantially perpendicular to the longitudinal axis, the second aperture having a second length extending substantially along the longitudinal axis and a second width extending substantially transverse to the longitudinal axis, the second length being greater than the second width such that the second aperture is elongated along the

longitudinal axis; a third aperture extending from the external surface to the internal surface in a direction substantially perpendicular to the longitudinal axis, the third aperture having a third length extending substantially along the longitudinal axis and a third width extending substantially transverse to the longitudinal axis, the third length being greater than the third width such that the third aperture is elongated along the longitudinal axis,” as recited by claim 28; and

- “a second aperture extending from the external surface to the internal surface along a second axis substantially perpendicular to the longitudinal axis, the second aperture having a second length extending substantially along the longitudinal axis between a proximal wall and a distal wall, the second aperture having a first width extending substantially transverse to both the longitudinal axis and the second axis between a pair of sidewalls, wherein the second length is greater than the second width such that the second aperture is elongated along the longitudinal axis and wherein the proximal wall, distal wall, and pair of sidewalls extend in a direction substantially parallel to the second axis . . . a third aperture extending from the external surface to the internal surface along a third axis substantially perpendicular to the longitudinal axis, the third aperture having a third length extending substantially along the longitudinal axis between a proximal wall and a distal wall, the third aperture having a first width extending substantially transverse to both the longitudinal axis and the third axis between a pair of sidewalls, wherein the third length is greater than the third width such that the third aperture is elongated along the longitudinal axis and wherein the proximal wall, distal wall, and pair of sidewalls extend in a direction substantially parallel to the third axis,” as recited by claim 35.

Accordingly, even when combined, Mickel and Crawford do not disclose or suggest these additional features recited in dependent claims 25, 28, and 35.

Further, as discussed above, Mickel fails to disclose a locking member that is translatable along the longitudinal axis with respect to the coupling shaft from an unlocked position to a locked position. In that regard, Mickel discloses that the balls 82 and 82' are “free to move

radially within substantially cylindrical walls 80, 80' respectively." Mickel, col.6 ll.36-38. Because the cylindrical openings defined by walls 80 and 80' do not permit translation of the balls 82 and 82' with respect to the driving shaft 60 along axis BB, Mickel cannot be considered to disclose or suggest:

- "a second locking member positioned at least partially within the second aperture and movable along the longitudinal axis with respect to the coupling shaft from an unlocked positioned to a locked position to secure the medical dissection tool within the internal passage; and a third locking member positioned at least partially within the third aperture and movable along the longitudinal axis with respect to the coupling shaft from an unlocked positioned to a locked position to secure the medical dissection tool within the internal passage," as recited by claim 29;
- "wherein the first locking member is moveable at approximately a 45° angle relative to the longitudinal axis and the first aperture from the unlocked position to the locked position," as recited by claim 31;
- "wherein the first locking member translates at an angle of approximately 45° relative to the longitudinal axis and the first axis when moved between the unlocked and locked positions," as recited by claim 33; and
- "a second locking member positioned at least partially within the second aperture and translatable along the longitudinal axis with respect to the coupling shaft from an unlocked positioned to a locked position to secure the medical dissection tool within the internal passage, . . . a third locking member positioned at least partially within the third aperture and translatable along the longitudinal axis with respect to the coupling shaft from an unlocked positioned to a locked position to secure the medical dissection tool within the internal passage," as recited by claim 35.

Accordingly, even when combined, Mickel and Crawford do not teach or suggest all the recited features of dependent claims 29 and 35.

2. The Examiner has not shown how the elements being combined are performing their known or established function

KSR teaches that when combining elements from different references, it is important to determine whether the element is performing “the same function it had been known to perform.” *KSR* at 1740. It is clear that the passageway 146 of the Crawford patent cannot be modified to be substantially perpendicular to the longitudinal axis because this would destroy one of the intended functions of the Crawford patent. In particular, the passageway 146 is angled to prevent unwanted removal of the air plug 270. As the Crawford patent explains, “sloping wall 278 is at a 45° angle to the longitudinal axis while sloping passageway 246 is at a 37° angle to the longitudinal axis. Thus, slope 278 pushing against clamping ball 144 when trying to remove the male plug causes ball 144 to roll against the upper surface of passageway 146 into an ever decreasing space in a wedging type action, resulting in a positive type clamping of mail plug 270.” Crawford, col.11 ll.2-9. Further still, if the passageway was drilled substantially perpendicular to the longitudinal axis, then it would no longer meet the length and width requirements of the first aperture as recited in the pending claims. In that regard, the passageway 146 is “egg shaped” as viewed from the interior of the main body 120 because it is drilled at the 37° angle. If the passageway 146 was drilled at a substantially perpendicular angle, then it would no longer be “egg shaped” and, instead, would be substantially cylindrical from the drilling. Accordingly, for at least these additional reasons, the Mickel and Crawford patents cannot be properly combined to disclose or suggest the recited limitations of the pending claims.

Furthermore, the Applicants submit that the Mickel and Crawford patents are not properly combinable as suggested by the Office Action. In that regard, Mickel is directed to “apparatus and methods for coupling a driving shaft [] and a mating tool shaft [] to transmit rotational forces and axial tension and compression between the shafts.” Mickel, Abstract. In contrast, the Crawford patent is directed to an “inventive quick disconnect coupler device for connection between a source of compressed air and the flexible air line hose leading to an air operated tool.” Crawford, col.2 ll.20-23. That is, Mickel is directed to coupling a tool to a drive shaft, while Crawford is directed to connecting an air supply to an air operated tool. One skilled in the art would not utilize the coupling assembly of an air supply connection—where the connection is

substantially fixed and not subjected to high speed rotation—in lieu of a connection for transmitting “rotational forces and axial tension and compression.” There is simply no indication that the quick disconnect air coupler of Crawford is suitable for transmitting high-speed rotational forces. Accordingly, for at least these additional reasons, Mickel and Crawford are not properly combinable as suggested in the Office Action. Thus, the Examiner’s burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection of the pending claims 24-44 under 35 U.S.C. §103 should be withdrawn.

IV. Conclusion

In view of the foregoing remarks, all of the claims currently pending in this application are in a condition for allowance. A telephone interview is respectfully requested to discuss any remaining issues in an effort to expedite the allowance of this application. To that end, the Examiner is invited to contact the undersigned at 972-739-8641.

The Office Action contains characterizations of the claims and the related art of which Applicants do not necessarily agree. Unless expressly noted otherwise, Applicants decline to subscribe to any statement or characterization in the Office Action.

Respectfully submitted,

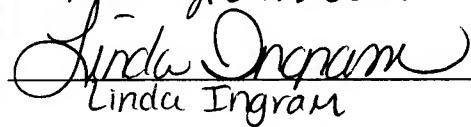


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